

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A field-sequential color display method comprising:
  - time-sequentially displaying of luminous information of an input image information with every display color; and
  - changing the display color in synchronism with the displaying of the luminous information in order to display the input image information,
  - wherein one frame period in which one color image is displayed comprises at least four sub-field periods in which information of each color is displayed, and a picture signal displayed in at least one sub-field period is a non-three-primary color picture signal ~~which is generated from at least two primary color signals comprising a color determined on the basis of the color picture signals of the input image information in one frame period, the color not being fixed to one color.~~
2. (Canceled)
3. (Currently Amended) A field-sequential color display method as set forth in claim [[2]] 7, wherein the display colors of the three-primary color picture signals include red, green and blue, and the display color of the non-three-primary color picture signal is any one of white, cyan, magenta and yellow which are generated from the at least two primary color picture signals.

4. (Currently Amended) A field-sequential color display method as set forth in claim [[2]] 7, wherein the non-three-primary color picture signal displayed in the sub-field period is determined on the basis of a part of image information of the input image information in one frame period.

5. (Currently Amended) A field-sequential color display method as set forth in claim [[1]] 7, wherein the non-three-primary color picture signal displayed in the sub-field period is determined on the basis of the input image information every a predetermined frame interval including a plurality of frame periods.

6. (Currently Amended) A field-sequential color display method as set forth in claim [[1]] 7, wherein the non-three-primary color picture signal displayed in the sub-field period is determined with every scene change of the input image information.

7. (Original) A field-sequential color display method as set forth in claim 1, wherein the picture signal displayed in each of the sub-field periods is one of modified picture signals which are obtained by separating the input picture signal into the n non-three-primary color picture signals and three modified three-primary color picture signals when n is an integer of 1 or more.

8. (Canceled)

9. (Currently Amended) A field-sequential color display method ~~as set forth in claim 7, comprising:~~

time-sequentially displaying of luminous information of an input image information with every display color; and

changing the display color in synchronism with the displaying of the luminous information in order to display the input image information,

wherein one frame period in which one color image is displayed comprises at least four sub-field periods in which information of each color is displayed, and a picture signal displayed in at least one sub-field period is a non-three-primary color picture signal which is generated from at least two primary color signals of input picture signals including three-primary color signals.

wherein the picture signal displayed in each of the sub-field periods is one of modified picture signals which are obtained by separating the input picture signal into n non-three-primary color picture signals and three modified three-primary color picture signals, where n is an integer of 1 or more, and

wherein the separation of the picture signals is carried out by detecting the minimum value of the three-primary color picture signals, causing the minimum value to be set as the signal value of a first non-three-primary color picture signal of the non-three-primary color picture signals, and causing a smaller signal value of two modified picture signals, which are obtained by subtracting the minimum value from the three-primary color picture signal values and which are not zero, to be set as a second non-three-primary color picture signal of the non-three-primary color picture signals.

10. (Original) A field-sequential color display method as set forth in claim 7, which includes converting process of the input picture signal into a chromaticity coordinates when the input picture signal is separated into the n non-three-primary colors picture signals and the modified three-primary color picture signals.

11. (Currently Amended) A field-sequential color display unit comprising:  
a sub-field determiner determining variably a non-three-primary color from three-primary color signals on the basis of an input picture signal including the three-primary color signals;

a non-three-primary color picture signal generator generating a non-three-primary color picture signal by selecting at least two primary color picture signals of three primary color signals on the basis of an input picture signal including the three primary color signals including the non-three-primary color which is determined by the sub-field determiner;

a monochrome image display sequentially displaying an input picture signal as a monochrome image;

a color display capable of changing a display color every sub-field period at least four of which constitutes one frame period, in which one image is displayed, in synchronism with the monochrome image displaying; and

a display color controller controlling the color display so as to display the non-three-primary color picture signal in at least one of the sub-field periods.

12. (Original) A field-sequential color display unit as set forth in claim 11, wherein the display colors of the primary color signals include red, green and blue, and the display color of the non-three-primary color picture signal is any one of white, cyan, magenta and yellow which are generated from the at least two primary color picture signals.

13. (Original) A field-sequential color display unit as set forth in claim 11, wherein the non-three-primary color picture signal generator includes a signal separating circuit separating the three-primary color signals from the input picture signal, and generates the

non-three-primary color picture signal from the three-primary color signals separated by the signal separating circuit.

14. (Original) A field-sequential color display unit as set forth in claim 11, wherein the monochrome image display is a self-emissive type-monochrome image display unit, and the color display is a color filter which is provided in front of the monochrome image display unit and which is capable of time-sequentially changing transmitted color.

15. (Original) A field-sequential color display unit as set forth in claim 14, wherein the color filter is a liquid crystal color shutter comprising liquid crystal cells, and a plurality of polarizers.

16. (Original) A field-sequential color display unit as set forth in claim 11, wherein the field-sequential color display unit is a projection type-display unit having an optical lens for enlarging or reducing a field-sequentially displayed color image to project the image on a screen.

17. (Canceled) A field-sequential color display unit as set forth in claim 11, wherein the color display is a color wheel.

18. (Original) A field-sequential color display unit as set forth in claim 11, wherein the field-sequentially color display unit is a head mounted display observing a field-sequentially displayed color image via an enlarging optical system.

19. (Original) A field-sequential color display unit as set forth in claim 11, wherein the monochrome image display is a transmissive type-liquid crystal light valve, and the color display is a backlight provided on the back side of the transmissive type-liquid crystal light valve, the backlight having a plurality of light sources capable of time-sequentially selecting or combining three-primary colors to emit light.

20. (New) A field-sequential color display method as set forth in claim 7, wherein the input picture signal is separated into two non-primary color picture signals and three modified three-primary color picture signals, the method further comprising:

detecting a minimum value of three-primary color picture signals of the input image information for every pixel;

setting the minimum value as the signal value of a first none three-primary color picture signal for every pixel;

subtracting the minimum value from each signal value of the three-primary color picture signals for every pixel;

setting remainders of the subtraction as signal values of first modified three-primary color picture signals for every pixel;

detecting combinations, in which values of two of the first modified three-primary color picture signals are not zero, out of combinations of the first modified three-primary color picture signals for every pixel;

detecting the number of each detected combination of the first modified three-primary color picture signals in one frame;

selecting a kind of combination of the largest number of the detected combination;

detecting a minimum value of the two of the first modified three-primary color picture signals of the selected combination for every pixel;

setting the minimum value for the selected combination and zero for the non-selected three-primary color picture signal as a signal value of a second non-three-primary color picture signal for every pixel;

subtracting the signal value of the second non-three-primary picture signal from each signal value of the first modified three-primary color picture signals for every pixel; and

setting remainder of the subtraction as a signal value of second modified three-primary color picture signals for every pixel,

wherein the picture signal displaying during each sub-field period is one of the first non-three-primary color picture signal, the second non-three-primary color picture signal, and the second modified three-primary color picture signal for every pixel.

21. (New) A field-sequential color display method asset forth in claim 7, wherein the input picture signal is separated into three non-primary color picture signals and three modified three-primary color picture signals, the method further comprising:

detecting a minimum value of three-primary color picture signals of the input image information for every pixel;

setting the minimum value as the signal value of a first non-three-primary color picture signal for every pixel;

subtracting, the minimum value from each signal value of the three-primary color picture signals for every pixel;

setting remainders of the subtraction as signal values of first modified three-primary color picture signals for every pixel;

detecting combinations, in which values of two of the first modified three-primary color picture signals are not zero, out of combinations of the first modified three-primary color picture signals for every pixel;

detecting the number of each detected combination of the first modified three-primary color picture signals in one frame;

selecting a first combination of the largest number of the detected combination;

detecting a minimum value of the two of the first modified three-primary color picture signals of the selected first combination for every pixel;

setting the minimum value for the selected first combination and zero for the non-selected three-primary color picture signal as a signal value of a second non-three-primary color picture signal for every pixel;

subtracting the signal value of the second non-three-primary picture signal from each signal value of the first modified three-primary color picture signals for every pixel;

setting remainder of the subtraction as a signal value of second modified three-primary color picture signals for every pixel,

detecting combinations, in which values of two of the second modified three-primary color picture signal are not zero, out of combinations of the second modified three-primary color picture signals for every pixel;

detecting the number of each detected combination of the second modified three-primary color picture signals in one frame;

selecting a second combination of the largest number of the detected combination;

detecting a minimum value of the two of the second modified three-primary color picture signals of the selected second combination for every pixel;

setting the minimum value for the selected second combination and zero for the non-selected three-primary picture signal as a third non-three-primary color picture signal for every pixel;

subtracting the signal value of the third non-three-primary picture signal from each signal value of the second modified three-primary color picture signals for every pixel; and

setting remainder of the subtraction as a signal value of third modified three-primary color picture signals for every pixel,

wherein the picture signal displaying during each sub-field period is one of the first to third non-three-primary color picture signals and the third modified three-primary color picture signals.

22. (New) A field-sequential color display method asset forth in claim 7, wherein the input picture signal is separated into two non-primary color picture signals and four modified three-primary color picture signals, the method further comprising:

detecting a minimum value of three-primary color picture signals of the input image information for every pixel;

setting the minimum value as the signal value of a first non-three-primary color picture signal for every pixel;

subtracting the minimum value from each signal value of the three-primary color picture signals for every pixel;

setting remainders of the subtraction as signal values of first modified three-primary color picture signals for every pixel;

detecting combinations, in which values of two of the first modified three-primary color picture signals are not zero, out of combinations of the first modified three-primary color picture signals for every pixel;

detecting the number of each detected combination of the first modified three-primary color picture signals in one frame;

selecting a first combination of the largest number of the detected combination;

detecting a minimum value of the two of the first modified three-primary color picture signals of the selected first combination for every pixel;

setting the minimum value for the selected first combination and zero for the non-selected three-primary color picture signal as a signal value of a second non-three-primary color picture signal for every pixel;

subtracting the signal value of the second non-three-primary picture signal from each signal value of the first modified three-primary color picture signals for every pixel;

setting remainder of the subtraction as a signal value of second modified three-primary color picture signals for every pixel,

detecting combinations, in which values of two of the second modified three-primary color picture signal are not zero, out of combinations of the second modified three-primary color picture signals for every pixel;

detecting the number of each detected combination of the second modified three-primary color picture signals in one frame;

selecting a second combination of the largest number of the detected combination;

detecting a minimum value of the two of the second modified three-primary color picture signals of the selected second combination for every pixel;

setting the minimum value for the selected second combination and zero for the non-selected three-primary color picture signal as a third non-three-primary color picture signal for every pixel;

subtracting the signal value of the third non-three-primary picture signal from each signal value of the second modified three-primary color picture signals for every pixel;

setting remainder of the subtraction as a signal value of third modified three-primary color picture signals for every pixel,

detecting combinations, in which values of two of the third modified three-primary color picture signal are not zero, out of combinations of the third modified three-primary color picture signals for every pixel;

detecting the number of each detected combination of the third modified three-primary color picture signals in one frame;

selecting a third combination of the largest number of the detected combination;

detecting a minimum value of the two of the third modified three-primary color picture signals of the selected third combination for every pixel;

setting the minimum value for the selected third combination and zero for the non-selected three-primary color picture signal as a fourth non-three-primary color picture signal for every pixel;

subtracting the signal value of the fourth non-three-primary picture signal from each signal value of the third modified three-primary color picture signals for every pixel; and

setting remainder of the subtraction as a signal value of fourth modified three-primary color picture signals for every pixel,

wherein the picture signal displaying during each sub-field period is one of the first to fourth non-three-primary color picture signals and the fourth modified three-primary color picture signals.

23. (New) A field-sequential color display method as set forth in claim 7, wherein the picture signal displaying during each sub-field period is one of the n non-three-primary color picture signal determined on the basis of a color breakup prediction model, and the three modified three-primary color picture signal.

24. (New) A field-sequential color display method as set forth in claim 7, wherein the color breakup prediction model is determined on the basis of each luminance value of the three-primary picture signal.